

## Claims

1. A packet transmission apparatus comprising:  
a voice encoding unit for voice-encoding an incoming  
5 voice band signal;  
a packet generating unit for accepting the encoded voice  
signal from said voice encoding unit, and for assembling packets  
from the encoded voice signal and outputting them;  
a redundant packet generating unit for accepting the  
10 encoded voice signal from said voice encoding unit, and for  
assembling redundant packets to each of which error correction  
data is added and outputting the redundant packets;  
a selector unit for selecting, as an output source that  
furnishes packets to a transmission destination, either said  
15 packet generating unit or said redundant packet generating  
unit; and  
a signal detecting unit for determining whether or not  
said voice band signal is a signal associated with predetermined  
data communications, and for controlling selection by said  
20 selector unit according to a result of the determination.

2. The packet transmission apparatus according to Claim  
1, characterized in that said signal detection unit determines  
whether said incoming voice band signal is a facsimile signal  
25 indicating image data to be transmitted via facsimile  
communications or a facsimile control signal used for  
controlling a communication procedure of carrying out facsimile  
communications, and controls the selection by said selector  
unit according to a result of the determination.

3. A packet transmission apparatus comprising:

a voice encoding unit for voice-encoding an incoming voice band signal;

a packet generating unit for accepting the encoded voice  
5 signal from said voice encoding unit, and for assembling packets from the encoded voice signal and outputting them;

two more redundant packet generating units each for accepting the encoded voice signal from said voice encoding unit, and for assembling redundant packets to each of which error  
10 correction data having a different degree of transmission-error-tolerance is added from the encoded voice signal and outputting them;

a first selector unit for selecting, as an output source that furnishes packets to a transmission destination, either  
15 one of said two or more redundant packet generating units;

a second selector unit for selecting, as an output source that furnishes packets to a transmission destination, either said packet generating unit or a redundant packet generating unit selected by said first selector unit;

20 a first signal detecting unit for, when said voice band signal is a signal associated with predetermined data communications, controlling selection by said first selector unit according to a type of said voice band signal; and

a second signal detecting unit for determining whether  
25 or not said voice band signal is a signal associated with the predetermined data communications, and for controlling selection by said second selector unit according to a result of the determination.

30 4. A packet transmission apparatus comprising:

two or more voice encoding units each for performing voice encoding with a different coding rate on an incoming voice band signal;

5 a packet generating unit for selectively accepting an encoded voice signal having a largest coding rate from the encoded voice signals obtained by said two or more voice encoding units, and for assembling packets from said selected, encoded voice signal and outputting the packets;

10 two or more redundant packet generating units each for accepting the encoded voice signal from one of said two or more voice encoding units, and for assembling redundant packets to each of which error correction data having a different degree of transmission-error-tolerance is added from the encoded voice signal and outputting them;

15 a first selector unit for selecting, as an output source that furnishes packets to a transmission destination, either one of said two or more redundant packet generating units;

a second selector unit for selecting, as an output source that furnishes packets to a transmission destination, either  
20 said packet generating unit or a redundant packet generating unit selected by said first selector unit;

a first signal detecting unit for, when said voice band signal is a signal associated with predetermined data communications, controlling selection by said first selector  
25 unit according to a type of said voice band signal; and

a second signal detecting unit for determining whether or not said voice band signal is a signal associated with the predetermined data communications, and for controlling selection by said second selector unit according to a result  
30 of the determination.

5. The packet transmission apparatus according to Claim 3, characterized in that said two or more redundant packet generating units include a first redundant packet generating unit for accepting the encoded voice signal from said voice encoding unit and for assembling redundant packets having a predetermined degree of transmission-error-tolerance and a second redundant packet generating unit for accepting the encoded voice signal from said voice encoding unit and for assembling redundant packets having a higher degree of transmission-error-tolerance than that of the redundant packets assembled by said first redundant packet generating unit, and said first signal detecting unit determines whether or not said incoming voice band signal is a facsimile control signal used for controlling a communication procedure of carrying out facsimile communications, and controls the selection by said first selector unit according to a result of the determination and said second signal detecting unit determines whether or not said incoming voice band signal is a facsimile signal indicating image data to be transmitted via facsimile communications, and controls the selection by said second selector unit according to a result of the determination.

6. The packet transmission apparatus according to Claim 1, characterized in that said apparatus comprises a line quality monitoring unit for monitoring a line quality of a transmission line and for controlling a degree of transmission-error-tolerance of the redundant packets assembled by said redundant packet generating unit according to the line quality.

7. The packet transmission apparatus according to Claim 1, characterized in that said apparatus comprises a line quality information acquiring unit for receiving line quality information about a line quality of a transmission line from a receive apparatus connected to said packet transmission apparatus via said transmission line, and for controlling a degree of transmission-error-tolerance of the redundant packets assembled by said redundant packet generating unit according to the line quality information.

8. The packet transmission apparatus according to Claim 1, characterized in that said apparatus comprises a transmission rate monitoring unit for monitoring a transmission rate of signals sent out onto a transmission line, and for controlling a degree of transmission-error-tolerance of the redundant packets assembled by said redundant packet generating unit according to the transmission rate.

9. The packet transmission apparatus according to Claim 1, characterized in that said apparatus comprises a congestion condition monitoring unit for monitoring a congestion state of signals to be processed within said apparatus, and for controlling a degree of transmission-error-tolerance of the redundant packets assembled by said redundant packet generating unit according to the congestion state.